AMATEUR SATELLITE REPORT

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AMSAT's Newsletter for the Amateur Space Program.

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Summary of Board Meeting

The complete "Official" minutes of the Board of Directors Meeting will be published in *ORBIT* magazine. Meanwhile, the following synopsis is provided to offer a glimpse of the topics covered and major decisions taken.

Directors attending the meeting which began 18 Nov. included W6SP, W3IWI, W6XN, W3GEY, VE2VQ, JA1ANG and G3IOR.

The annual meeting was discussed initially. Should the meeting be a two-day affair in the future? Should the meeting be more formal? These questions were asked by G3IOR. The Board approved a two-day meeting. A question and answer session would be part of the Annual Meeting the Board decided.

Commendations were voted for various individuals and groups for their recent contributions: W3TMZ, W3XO (annual meeting); GM4IHJ (software); G4GPQ (T-mail); JR1SWB (T-mail); W3GEY, ZS1FE, W4PUJ, WD4FAB, HA4WH (and team), DJ4ZC (and team), and W2FPY for the successful Phase IIIB design. Also K4YV as General Manager Selection Committee Chairman. Also the Phase IIIB launch support telemetry stations comprising WØPN, KA9Q, JR1SWB, ZL1AOX, W1HDX, DJ4ZC, VE1SAT. Also the AMSAT Software Exchange contributors N5AHD, N5BF, KØCY, N3AR, WØRPK, KØRZ. Also the ALINS Team under WØRPK including NØAN, AIØZ, WA6GFY, WA3TAI, W3OZ, G3AAJ, G3RWL, WH6AMX, KH6SP.

Next the Directors turned to discussing *ORBIT* magazine. W3IWI and W3GEY decried the absence of "serious" technical papers in *ORBIT*. WA2LQQ explained the attempted balance embodied in *"ORBIT's* editorial philosophy. The Board found it desireable to institute a separate technical publication for engineering papers resulting from work in the field. The publication would be self funding and available by subscription to anyone. Abstracts and notes on availability would be posted in *ORBIT* and *ASR*. The technical journal would be aperiodic.

ASR was next discussed. The *ASR* complimentary copy list will be reveiwed and cuts made as an economy.

Discussions on Telemail and the costs thereof followed. A study committee comprising W3IWI, KA9Q, NK6K and N2CF will recommend a course of action.

The nets were discussed with some thoughts given to establishing new net services to cover omitted areas.

The AMSAT Software Exchange and various fund raising efforts were presented by N2CF. He followed with some ideas on obtaining grants.

Future planning activities were cited as crucial to overall budgeting activity.

Several hours were spent discussing the proposed duties of the General Manager and the President and how they should relate to each other.

WA2LQQ described the member recruitment drive. W2RS presented his plan for the structure of an awards program. The VP-Ops will head an awards committee.

Current satellite programs were thoroughly reviewed by W3GEY.

Operations on AO-10 were described by K1HTV.

W3GEY suggested a two-tiered approach to future satellite projects may be in order. The first would be a modest domestic project; the second an ambitious international collaboration as was Phase III A, B and C.

W3XO briefed on the plans for STS-9. K8OCL introduced a guest, Dr. James French, Vice President of the World Space Foundation, who gave a presentation aimed at showing where WSF and AMSAT could cooperate in future missions.

NK6K gave an update on PACSAT. A Space Shuttle launch for this project is possible. Then NK6K presented a UoSAT B update and progress report.

The AMSAT OSCAR Spacecraft Laboratory was the next point of discussion. N2CF will relieve W3GEY as responsible signatory for the facility at Goddard.

The budget was approved as presented after considerable discussion.

Officers elected were: W3IWI, President; WA2LQQ, Executive Vice President; K8OCL, Senior Vice President; W3GEY, Vice President-Engineering; KO5I, Vice President-Operations; KA9Q, NK6K, W2FPY, Assistant Vice Presidents-Engineering; WH6AMX, WØRPK, Assistant Vice Presidents-Operations; K9LF, Vice President, Special Projects; M. Saragovitz, Corporate Secretary; W3TMZ, Treasurer; W6SP, Chairman of the Board.

K9LF is to work on Bylaws revisions concerning the General Manager's responsibilities.

W3GEY moved for a Long Range Planning Committee. The committee was authorized with members W3IWI, N2CF, K9LF, W8GQW, WA6VGS, W3GEY, KO5I and Chaired by WA2LQQ.

The meeting then adjourned. For a fuller account, please read the minutes kept by KA9Q, Secretary to the Board, to be published soon.

Short Bursts

• DX notes: DJ4ZC continues his vacation on Tenerife. Karl will be on AO-10 Mode B with most likely operating times 1200 until 1500 UTC through 5 Jan. 84. Watch for him in ssb portion of the band.

• LU4ENQ reports an immenent DXpedition to Laurie Island, one of the South Orkney group, beginning New Year's Day, 1 Jan. 84 and running throughout January. The QTH is 60 S by 44 W. Arturo, LU6ETB, and Carlos, LU9EIE, will be active on AO-10, RS-7 and 8. QSL to AZ5ZA. Watch 145.945 MHz on Mode B for this DXpedition. Tks Carlos, LU4ENQ!

• KA7APJ will be operating AO-10 Mode B from Fiji signing 3D2JS from 20 Dec. to 4 Jan. He'll also be on the RS birds. Tks WØCY!

• Orbital info can be obtained from an African RTTY MSO, ZS6CC. Watch 14084.73 kHz. Access code is "RRRR:ZS6CC (CR)". For orbital data transmit ":READ 6 (CR)".

• Congratulations to officers of AMSAT DL elected recently: DJ4ZC, President; DK5KQ, VP; DF4FE, Executive Board.

• New on AO-10 are FK8CR; FK8SB on soon. P29FS and VE8CM recently heard.

• In the final weeks before closing the Membership Recruitment Drive, the scores leaders, their place standing and point tally were: 1. N3CEG (53); 2.KW2U (51); 3. WD4FAB (17); 4. WA6VGS (14); 5. K8OCL (13); 6. [Tie] W3IWI & W6ISO (8); 8. K8MU (7); 9. [Tie] WH6AMX & VE5XQ (6). Final scores and prize winners will be announced in early January. Cutoff for recruiting for credit on this drive: 31 Dec. 83.

• Norm Chalfin, K6PGX, has sets of 35mm slides featuring AO-10 for sale. Contact him at his address for details. K6PGX, P.O. Box 463, Pasadena, CA 91102.

• The Westlink Radio News needs support to continue its work. Frequently used by AMSAT for valuable news of the Amateur Radio Community, it has provided a valuable service to thousands but is in jeopardy of ceasing its operation if donations are insufficient. K6PGX is organizing the "kitty" for this fund raiser. A donation to the P.O. Box 463 as above will help keep Westlink on the air.

• Stamp collectors should contact AMSAT HQ regarding the few STS-9 first day covers from the Solomon Islands still available. First come....

• Annual Members are reminded that it's renewal time.

• The "Name In Space" program has a tentative OK from G3YJO to place a list of donors names aboard UoSAT-B. The second UoSAT scientific satellite is due for launch this Spring, perhaps in March.

• A special Christmas message is loaded and running on the AO-10 telemetry beacon, 145.810 MHz. Enjoy!

• The No-Code license proposal balloon floated by FCC earlier which formed one of the strongest polarizations in many years was torpedoed by a coalition who feared CB-types would ravage the safe-harbor (?) on 20 meters et al as they had on 11 meters. Sinking slowly into the surf, guns silent now, are the equipment manufacturers and dealers who eagerly eyed a new market made of, besides the CBers, the computer hackers. ARRL led the coalition to victory citing a 15 to 1 opposition to No-Code in its ranks. AMSAT took no position in the hostilities choosing neutrality as the wisest posture in the fracas.

• Sales of the N5AHD software book (*ASR* 67, page 3) are reported brisk. Get yours while the supply lasts.

• WØRPK reports the first-ever Iowa packet QSO took place on 3 Dec. between WAØWYW and WØRPK. Ralph reports two dozen other packeteers are poised around Iowa readying their TAPR TNCs. WØRPK is AMSAT Assistant Vice President for Operations and lives in Indianola.

• The year 1983 was a banner year to be a ham. What with the evacuation of Granada, STS-9 and of course AO-10, ham-dom was an interesting QTH. The high public profile resulting from Granada and STS-9 may pay enormous dividends for years to come.

• Incidentally, the phrase, "Ham-In-Space" seems to have come into widespread use this year. Where'd this catchy phrase come from? Best guess is that the expression was jointly coined by two warped minds at roughly the same time. Both W3IWI and WA2LQQ liked the phrase as an adaptation of the Muppet TV show segment, "Pigs In Space." In it the characters enact a latter day version of the Flash Gordon cast. In this version, however, all the cast are Muppet pigs led by the imicable Miss Piggy. "Hams-In-Space" surfaced first on the AMSAT T-Shirts introduced at the 1981 Dayton Hamvention. The theme featured a design commissioned by K9LF based on the WA2LQQ/W3IWI "Hams-In-Space" concept. WA2LQQ spent several months in negotiations with Henson Associates (HA), owners of the copyright, for gratis use of the images associated with the "Pigs-In-Space" cast. The negotiations proved unsuccessful however when HA realized the cost of drafting a licensing agreement for AMSAT would be too costly in terms of their attorney's time. Thus AMSAT reverted to the LQQ/IWI "Hams-In-Space" theme. And it seems to have gained currency thereafter.

• Some curious operating schedules on the RS birds recently have raised a few eyebrows. Some are worried about these birds being in trouble. The telemetry of 5, 6, 7 and 8 have been locked on channel 1, element D. "D" is the voltage on the solar arrays (power source). One guess is that the degradation of the arrays due to radiation is being tested and compared between satellites. Perhaps different cells were used and the authorities want to evaluate the survival characteristics of the various versions. The RS birds in their average 1650 km (1100 mile) circular orbits are very close to regions of intense radiation (VanAllen belts). The penalty for high orbits is radiation exposure and consequential damages to,

in particular, silicon structures such as solar cells and integrated circuits.

• Meanwhile, rumors continue to circulate that a new generation of RS birds is being readied. Reports appearing in the journal *RADIO* show a continuing development program with increasingly sophisticated digital control and signaling systems evident. Dex Anderson, W4KM, has translated many of the more interesting articles. These will appear in future issues of *ASR* and *ORBIT* as space allows. No word on when a new RS launch might be expected though. Will the next "bunch" be in a Molniya orbit similar to AO-10? Again the information is fragmentary but no one will rule out the possibility that there could be two or more Molniya's before the new year is out. Watch this space!

• The ARRL/K2UBC "Satellite Experimenter's Handbook" is due off the presses in 2 weeks. Order info in *ASR* #67.

• The FCC has said no to the expansion of the 10 meter repeater band. Proponents had sought to expand the FM repeaters right on top of the sensitive Mode A turf from 29.3 to 29.5 MHz. The FCC said there seemed no ample justification provided to expand the existing 10 meter FM repeater band especially since the weak-signal satellite downlink passband would be devastated as a result. Both AMSAT and ARRL filed strongly worded opposition to the NPRM. K8OCL and N2CF led AMSAT's position-filing to protect the Mode A turf.

• K2ZRO's new Satellipse kit is now available. Similar in design to the model he described in *ORBIT* #14. The price is $10 postpaid. (N.Y. orders, add $0.40). Mail to ZRO Technical Devices, P.O. Box 11, Endicott, NY 13760. The manual tracker can be used with Project OSCAR calendar for 1984 (See *ASR* #67).

STS-9 Wrapup: "Unqualified Success!"

The historic first Ham-In-Space mission of Owen Garriott came to a conclusion at Edwards AFB in California on Thursday, 8 December. Thus W5LFL became the first amateur radio operator to operate from a space vehicle in earth orbit.

The first QSO between W5LFL and an earth-bound ham occurred on Wednesday, 30 November, when STS-9 was on the southeast-bound portion of orbit #40. WA1JXN of Frenchtown, Montana was first to nab W5LFL while W5LFL was well off the coast of Oregon. WA1JXN is a prominent EMEer with a large array of 2 meter beams and a full gallon in the shack on 2.

The first international contact came on Sunday, 4 December, when W5LFL QSOed with King Hussein, JY1. His Majesty was most cordial and seemed as pleased with the QSO as was W5LFL. W6AQ videotaped the QSO for the final version of the ARRL movie, "Final Frontiers".

Other special QSOs accomplished by W5LFL included Senator Barry Goldwater, K7UGA; the Space Center Amateur Radio Club (Houston), W5RRR; ARRL HQ, W1AW; the Motorola Radio Club, WB4LZR; the Enid (Oklahoma) Amateur Radio Club, W5HTK. In a telephone interview with *ASR*, Owen remarked that he even talked with his mom in Enid, his home town, through the facilities of W5HTK. Owen also chatted with his sons via W5RRR. A special patch from VK1ORR to Houston while W5LFL was in contact with VK1ORR in Canberra provided a vivid demonstration of the superb capabilities available to hams. In his telephone interview with WA2LQQ, Owen remarked that the patch through VK1ORR to Houston equalled or exceeded the quality of the S-band and K-band channels available to him as part of NASA's regular communications channels.

Owen went on to assert they had "Accomplished everything they had set out to do." Speaking earlier with ARRL's KB1N, he remarked that, "Thorough planning before the flight was absolutely essential."

W5LFL tape recorded all of the QSOs as a log. Owen has reviewed the tapes and has identified about 300 callsigns. He believes there may be another 10 or 15% to be culled by someone with "contest ears". During the flight he was bothered by background noise in the Shuttle. *ASR* will publish the list when available.

The mission is being viewed quite positively by NASA's senior managers as well. Many of the fence-sitters and nay-sayers are reportedly impressed enough with the present effort to nod affirmatively towards the next opportunity. That could come next year with the flight of Dr. Tony England, WØORE.

The radio on board worked quite well and the batteries stocked lasted for the slightly more than 4 hours on-the-air-time expended. The antenna worked remarkably well according to Garriott. Even when the spacecraft was oriented so that the antenna pointed skyward, ground stations could be copied. Apparently the entire spacecraft acted as an antenna since the F/B ratio of the DDR ring is about 10 dB. The antenna was designed by NASA's W5AVI of the Johnson Space Center.

A major puzzle remains to be answered. Why were no Japanese stations worked?

And so W5LFL goes into the history books. And we have seen one of the all-time high-water marks for amateur radio.

New Projects Prospectus

Several new projects are just now in the early planning stages. We thought we'd bring them to your attention so if you care to get involved early, you can.

First, Vice President for Operations, Doug Loughmiller, KO5I, is heading up a committee to establish a comprehensive awards program. Doug seeks to create incentives for good operating practices in a low-intensity competitive environment and for spurring technical achievement in establishing and maintaining a superior satellite station. If you have some ideas on an awards program or a particular award you'd like to see instituted, write to Doug at 2335 Simpson St., Paris, TX 75460 (before 15 Jan. 84).

Second, a program to give broad exposure to AO-10 capabilities to the amateur radio community at large is being developed by WA2LQQ. The concept here is to employ local FM repeaters linked to AO-10-capable stations to provide so-called gateways to other repeaters and users similarly equipped. The aim is not necessarily to demonstrate that an individual with an HT can talk with another with an HT in a trans-oceanic QSO, but rather that with reasonable equipment and sound operating practices, operating on AO-10 can be easy and fun. The "Sister Cities Gateway Project" would schedule specific demonstrations through AO-10 for paired cities whose repeaters have been properly interfaced and verified capable of providing demonstration gateway service via AO-10. Interested? Send your ideas and comments with an SASE to WA2LQQ, P.O. Box 177, Warwick, NY 10990. Meanwhile, to get an idea of what equipment might be required, send to AMSAT HQ for a free flyer on the WB3EYB gateway station. Simply send a SASE to P.O. Box 27, Washington, DC 20044.

Third, early in 1984, AMSAT will be presenting a demonstration of AO-10 emergency communication capabilities to several government agencies. The result of this demonstration could be an opening of doors leading to launch opportunities. AMSAT would like to begin now to arrange for simulated emergency test exercises similar to the ARRL's SETs. Would you like to participate in Satellite Simulated Emergency Test (SSET)? Would you be available for dispatch on a real emergency if called on? Could you (would you) operate an amateur radio satellite station from an emergency location using portable equipment? Have you ideas on how an Satellite Equipped Emergency Reaction Team (SEERT) might be organized? Operated? Write AMSAT at P.O. Box 27, Washington, DC 20044. A SASE will help.

Volunteers Demonstrate "The Right Stuff"

Regular readers of our publications are well aware of AMSAT efforts to improve our basic capabilities. We continuously look for methods to enhance membership services and satellite operations, and to assist with fund raising. For good ideas to be implemented, we also require volunteers to take charge and to get the work done. Two Los Angeles area amateur satellite stalwarts have clearly demonstrated that they have "the right stuff" by originating *and* implementing a scheme which accomplishes all desired objectives.

John Fail, KL7GRF/W6 of Long Beach and Julian Macassey, N6ARE of Pasadena have combined their impressive talents to make the latest AMSAT-OSCAR azimuth-elevation antenna pointing data readily available. The information is computed for satellite users residing in Southern California. The data is printed in a package which provides current information for a one-month period. The booklets can be obtained from the AMSAT booth at the TRW swap-meet in Redondo Beach on the last Saturday of each month or from the Henry Radio stores in Los Angeles and Anaheim. The price is a $3.00 donation to AMSAT. An expanded version, which includes access information for selected DX locations, is available for a $6.00 donation. Both packages are also available by mail order from: Julian Macassey, 475 North Daisy Avenue, Pasadena, CA 91107.

Mail orders should be accompanied by a large self-addressed envelope with forty cents postage (sixty cents for the DX version).

Implementation of similar local publication distribution programs in other geographical regions could assist additional AO-10 users as well as provide funding for future satellites. Any volunteers?

From KA9Q

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Mon Dec 26 01:04:50.155 1983 UTC at 19.927N 162.172E
Mon Dec 26 12:44:22.118 1983 UTC at 19.966N 13.133W
Tue Dec 27 00:23:54.817 1983 UTC at 20.005N 171.562E
Tue Dec 27 12:03:26.450 1983 UTC at 20.044N 3.743W
Tue Dec 27 23:42:58.834 1983 UTC at 20.083N 179.047W
Wed Dec 28 11:22:29.972 1983 UTC at 20.121N 5.648E
Wed Dec 28 23:02:01.935 1983 UTC at 20.160N 169.657W
Thu Dec 29 10:41:33.898 1983 UTC at 20.198N 15.039E
Thu Dec 29 22:21:05.862 1983 UTC at 20.236N 160.266W
Fri Dec 30 10:00:37.825 1983 UTC at 20.274N 24.430E
Fri Dec 30 21:40:09.788 1983 UTC at 20.312N 150.875W
Sat Dec 31 09:19:41.752 1983 UTC at 20.350N 33.821E
Sat Dec 31 20:59:13.715 1983 UTC at 20.388N 141.483W
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